	Application No.	Applicant(s)
Notice of Allowability	10/678,602	LOUGHMILLER ET AL.
	Examiner	Art Unit
	Omar F. Fernández Rivas	2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *an amendment filed by Applicant entered on August 14, 2006*.

2. ☒ The allowed claim(s) is/are *1 and 7-13*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date A1,A2,A3

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DAVID VINCENT
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with Guy Perry on September 12, 2006.

2.   Additions made to the claims by the Examiner are underlined (<u>example</u>) and

deletions are strike through (~~example~~).

Claims

1. (Currently amended) A method for blocking delivery of unwanted spam messages,

comprising the steps of:

recognizing patterns including words and groups of words in a messages;

applying a plurality of machine learning techniques including a two-level neural

network responsive to the recognized patterns in order to classify the message, the two

levels of neural networks include:

a primary neural network level that determines if the message is likely <u>a non-</u>

<u>spam message</u> ~~good~~ or likely <u>a</u> spam <u>message</u>; and

a secondary neural network level that includes a pair of neural networks

including:

a first secondary level neural network that determines if a likely non-spam ~~good~~

message from the first neural network level is actually a non-spam message ~~good~~ or a

bulk message, and

a second secondary level neural network, different from said first secondary level

neural network, that determines if a likely spam message from the first neural network

level is a spam message or a bulk message;

for messages classified as bulk, providing user access to at least a listing of

message subject field data corresponding to said bulk messages; and

for messages classified as spam, blocking delivery of the messages to at least

one intended recipient.

2-6. Cancelled

7. (Original) A method as in claim 4, wherein for at least one of the classifications the

neural networks classify the message in one of three classifications, wherein more than

one path through the neural networks exists for the message to arrive at that

classification.

8. (Original) A method as in claim 1, further comprising the step of dynamically

maintaining the neural networks responsive to classification of the message.

9. (Original) A method as in claim 1, further comprising the step of applying rules to the

message to help classify the message.

10. (Original) A method as in claim 9, wherein if the message is classified by the rules, the step of applying the neural networks is skipped.

11. (Original) A method as in claim 9, wherein the rules utilize a whitelist, a blacklist, or both the whitelist and the blacklist.

12. (Original) A method as in claim 11, further comprising the step of dynamically maintaining the whitelist, the blacklist, or both the whitelist and the blacklist responsive to classification of the message.

13. (Original) A method as in claim 11, wherein the step of recognizing expressions . further includes the step of applying a genetic algorithm to select a set of regular expressions to be recognized.

REASONS FOR ALLOWANCE

3.   The following is an examiner's statement of reasons for allowance: claims 1-3, 7-9, 13-40 are considered allowable since when reading the claims in light of the specification, as per MPEP § 2111.01, In re Donaldson Co., Inc., 29 USPQ 2d 1845, 1850 (Fed. Cir. 1994), or In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385 (Fed. Cir. 1983), none of the references of record alone or in combination disclose or suggest the combination of limitations specified in the independent claims. The Applicant discloses

a method for blocking delivery of unwanted spam messages. The method uses a first

level neural network (as shown in Figure 3) that classifies a message as a non-spam

message or a spam message. Messages classified by this first level neural network as

non-spam messages are passed to a first secondary level neural network (as shown in

Figure 3) to determine if the non-spam message is a non-spam message or a bulk

message. If the first level neural network determines that the message is spam, it

sends the message to a second secondary level neural network (as shown in Figure 3)

that determines if the message is a spam message or a bulk message. For messages

classified as bulk, a listing of message subject fields are presented to the user.

Messages classified as spam are blocked from delivery to the user.

Horvitz teaches a method in which a probabilistic classifier detects electronic

messages that the recipient is likely to consider "junk". The probabilistic classifier is

trained to produce a probability measure for each message. The probability measure is

then compared against a threshold to determine if the message is spam or legitimate.

The message is then stored in a folder corresponding to the determination made by the

classifier.

Donaldson teaches an email filtering system that uses an Active Filtering proxy to

filter electronic junk mail. The system uses a whitelist and a blacklist to detect if the

sender of the message is authorized or not to send messages to the recipient. If the

sender is not authorized, the connection to the recipient is closed.

Horvitz and Donalson, alone or in combination do not teach a method for

blocking delivery of unwanted spam messages using a first level neural network that

classifies a message as a non-spam message or a spam message, sending messages

classified by this first level neural network as non-spam messages to a first secondary

level neural network to determine if the non-spam message is a non-spam message or

a bulk message or if the first level neural network determines that the message is spam,

sending the message to a second secondary level neural network that determines if the

message is a spam message or a bulk message, presenting a listing of message

subject fields to the user for messages classified as bulk, and blocking delivery to the

user if the message is classified as spam.

Any comments considered necessary by applicant must be submitted no

later than the payment of the issue fee and, to avoid processing delays, should

preferably accompany the issue fee. Such submissions should be clearly labeled

"Comments on Statement of Reasons for Allowance."

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Rothwell et al. US Patent #6,769,016

Leeds US Patent #6,393,465

5.   Claims 1 and 7-13 are allowed.

Correspondence Information

6.   Any inquires concerning this communication or earlier communications from the

examiner should be directed to Omar F. Fernández Rivas, who may be reached

Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at

(571) 272-2589 or email omar.fernandezrivas@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (571) 273-8300.

      If attempts to reach the examiner are unsuccessful the Examiner's Supervisor,

David Vincent, may be reached at (571) 272-3080.

      Hand-delivered responses should be delivered to the Receptionist @ (Customer

Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located

on the first floor of the south side of the Randolph Building.

<div style="text-align:center">

Omar F. Fernández Rivas
Patent Examiner
Artificial Intelligence Art Unit 2129
United States Department of Commerce
Patent & Trademark Office

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OFR
9-15-06

DAVID VINCENT 4/18/06
SUPERVISORY PATENT EXAMINER